

REMARKS

Responsive to the Office action mailed May 8, 2008, applicant request entry of the foregoing amendments, consideration of the following remarks and reconsideration of the rejections set forth in said office action.

The specification was objected to due to informality at page 6, line 33. The informality has been corrected through amendment.

Claims 2 was rejected to under 35 USC 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regard as the invention. More particularly, claim 2 was held to be in improper Markush format. Claim 2 has been amended.

Claims 1-3, 5, 6, 8,11-13, 15-18, 20, 21 and 24-28 were rejected under 35 USC 102(b) as being anticipated by Brown et al. 6,172,154 or Brown et al. 6,291,572. Applicant submits that neither Brown '154 nor Brown '572 discloses each and every feature as claimed in the present application and the rejection under 35 USC 102(b) should be withdrawn.

The present invention is directed to the discovery of a sulfur-vulcanizable elastomeric composition comprising at least one diene elastomer and at least one reinforcing filler such as silica, obtained by a process comprising the mixing of the elastomer and the filler with an effective amount of a coupling agent consisting of a combination of a blend of poly(alkylphenol) polysulfides of the formula set out in the application and bis(triethoxysilylpropyl)tetrasulfide. The present inventors discovered that the use of a coupling agent that consisted of a combination of both poly(alkylphenol) polysulfides and bis(triethoxysilylpropyl)tetrasulfide provided improved properties such as lower rolling resistance of tires formed from the materials at reduced coupling agent treatment levels. The coupling agent combination of the present invention allows for the incorporation of a reinforcing filler at reduced coupling agent levels. The surprising effect of using the combination of blend of poly(alkylphenol) polysulfides and bis(triethoxysilylpropyl)tetrasulfide as a coupling agent in elastomers which provides tires exhibiting improved rolling resistance at reduced additive treatment levels is not disclosed by the cited prior art.

Brown et al ‘154 discloses elastomers with dual phase aggregates and pre-vulcanization modifiers. The dual phase aggregates of Brown et al. ‘154 are a silicon-treated carbon black. The pre-vulcanization modifiers are non-silane polysulfide organo-compounds including non-silane arylphenol polysulfides and non-silane alkylphenol polysulfides. Brown et al. ‘154 disclosed the use of pre-vulcanization modifiers such as para-tertiarybutyl phenol polysulfide **as an alternative** to coupling agent such as bis-(3-triethoxysilylpropyl) tetrasulfane. See Brown et al. ‘154 at column 12, lines 17-20, emphasis added. Thus, Brown et al. ‘154 does not teach or suggest the use of the combination of the present invention, but directs that they be used in the alternative. This is reinforces in Table 1 of Brown et al. ‘154 where TESPT and APPS are used not in combination but as alternatives. Brown et al. ‘572 includes the identical teachings at column 41, line 50 through column 42, lines 3.

Applicant submits that the teaching of Brown et al ‘154 and ‘572 that non-silane polysulfide organo-compounds such as non-silane arylphenol polysulfides and non-silane alkylphenol polysulfides and bis-(3-triethoxysilylpropyl) tetrasulfane can be used as alternative coupling agents for silicon-treated carbon black fails to anticipate the present invention where it was discovered that the combination of poly(alkylphenol)polyusulfide and bis- (3-triethoxysilylpropyl) tetrasulfane provided for improved properties for the resulting elastomer (lower rolling resistance as evidenced by lower tan δ numbers). Applicant submits that neither Brown et al. ‘154 nor Brown et al. ‘572 anticipate the present invention and the rejection should be withdrawn .

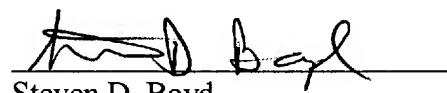
Claims 1-13 and 15-28 were rejected under 35 USC 103(a) as being unpatentable over Brown et al. ‘154 or Brown et al. ‘572. Applicant submits that neither Brown et al. ‘154 nor Brown et al. ‘572 render obvious the present invention. As discussed above, both Brown et al. ‘154 and Brown et al. ‘572 disclose the use of materials in the alternative while the present inventor found an advantage to the use the materials in combination. It is submitted that there is no direction, motivation or suggestion in either Brown et al. ‘154 or Brown et al. ‘572 that combining a blend of poly(alkylphenol) polysulfides of the formula set out in the application and bis(triethoxysilylpropyl)tetrasulfide as set forth in the present invention will provide improved properties for the resultant sulfur-vulcanizable elastomer.

In view of the foregoing remarks, applicant respectfully submits that claims 1-6, 8-20 and 22-29 of the

present application are in condition for allowance and prompt favorable action is solicited.

Respectfully submitted,

Date: December 3, 2006



Steven D. Boyd  
Attorney of Record  
Reg. No. 31,000  
(215) 419-5270  
**Customer Number 31684**